

Lilaeopsis brisbanica (Apiaceae), a new species from Queensland, Australia

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Summary

Bean, A.R. (1997). *Lilaeopsis brisbanica* (Apiaceae), a new species from Queensland, Australia. *Austrobaileya* 5(1): 145–148. *Lilaeopsis brisbanica* A.R.Bean is described and illustrated, and diagnosed against related species. Notes on habitat, ecology, cultivation and conservation status are provided.

Key words: *Lilaeopsis*, taxonomy, Australian flora, *Lilaeopsis brisbanica*, Apiaceae, Umbelliferae.

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Introduction

Members of the genus *Lilaeopsis* Greene are semi-aquatic herbs from temperate to sub-tropical areas of both hemispheres. Species are known from the United States of America, Mexico, several South American countries, New Zealand and Australia (Hill 1927, Affolter 1985). The genus was first recorded for Australia by J.D. Hooker in 1852. Bentham (1867) subsequently included all Australian material under the name *Crantzia lineata* (Michx.) Nutt. (now *Lilaeopsis chinensis* (L.) Kuntze), a species whose type comes from the eastern United States of America. A worldwide revision was provided by Hill (1927), who enumerated three species for Australia at that time, and added another species soon after (Hill 1929). Eichler (1963) discussed the nomenclature of the Australian species. In a recent monograph of the genus, Affolter (1985) accepted just two species for Australia, *L. polyantha* (Gand.) H.Eichler and *L. fistulosa* A.W.Hill.

The taxon described here as *L. brisbanica* was first collected by Amalie Dietrich between 1863 and 1865, and soon after by F.M. Bailey. Hill (1927) made special mention of Dietrich's specimens, and thought that they could represent a new species, distinct from *L. australica* (syn. *L. polyantha*), but

as her specimens lacked mature fruits, Hill conservatively retained them under *L. australica*. Blake (1959) also noted the distinctiveness of the Queensland material and he ascribed it to *L. novae-zealandiae* (Gand.) A.W.Hill, a species described from the South Island of New Zealand. Affolter (1985) adopted a very broad species concept for *L. polyantha*, and concluded that "the Queensland specimens are within the range of variation seen elsewhere in *L. polyantha* in Australia". The present study reveals that the Queensland material is distinct from both *L. polyantha* and *L. novae-zealandiae*.

Taxonomy

***Lilaeopsis brisbanica* A.R.Bean sp. nov.**, affinis *L. novae-zealandiae* autem bracteis 0.5–1.3 mm longis, fructibus 7 vittis in quoque mericarpo et costis dorsalibus prominentioribus praeditis, plerumque septis paucioribus in quoque folio differt.
Typus: Queensland. MORETON DISTRICT: Brisbane River, adjacent to Queenscroft St., Chelmer, 26 November 1995, A.R. Bean 9243 (holo: BRI; iso: MEL, MO, NSW, distribuendi).

Mat-forming herbs 1.5–4 cm high, glabrous, rhizomatous, producing roots and leaves at the nodes. Roots white, slender, to c. 10mm long. Rhizomes c. 0.5 mm in diameter, white or occasionally green when close to surface.

Leaves all radical, 3–6 arising from each node, or on a vertical rhizome branch up to 10 mm long; petioles c. 1.5 mm long, sheathing. Leaves hollow, linear, narrowly elliptical in cross-section, 11–36 mm long, leaf width uniform throughout or slightly broader near apex, 0.2–0.5 mm wide midway along lamina, up to 1.0 mm wide near apex, apex obtuse, leaves with 5–7 thin transverse septae, unstricted at septae. Inflorescence a simple, 2–5-flowered umbel, one only from each node, peduncle terete, 4.5–11.5 (–14) mm long. Pedicels slender, terete, 3.5–7.0 mm long, together subtended by 2–3 broadly ovate bracts, each 0.5–1.3 × 0.4–0.6 mm. Flowers bisexual, 2.1–2.5 mm in diameter. Calyx lobes 5, vestigial, c. 0.1 mm long, persistent. Petals 5, broadly ovate, 0.8–0.9 × 0.5–0.6 mm, spreading, alternating with the calyx lobes, white or greenish, broad at base, apex acute, midrib thickened. Stamens 5, antesealous; filaments c. 0.4 mm long; anthers bilocular, 0.25–0.4 mm long, dehiscent by longitudinal slits. Ovary inferior, 2-carpellate, each carpel containing 1 ovule. Styles 2, each arising from inner edge of carpel summit, persistent; stigmas scarcely distinguishable. Fruits ovoid to ellipsoid, 1.2–2.0 mm long, 1.0–1.3 mm diameter, each mericarp with 3 dorsal and 2 lateral ribs; all ribs prominent in cross-section, with lignified tissue present. Vittae 7, alternating with the ribs and including 3 along the commissure. Fig. 1 A–D.

Specimens examined: Queensland. MORETON DISTRICT: Breakfast Creek, undated, *Bailey* s.n. (BRI); Brisbane River, in 1874, *Bailey* s.n. (BRI); Brisbane River, SW of Brisbane, 100 m downstream from Jindalee bridge, Oct 1993, *Bean* 6778 (BRI, MO); Moggill Creek, 200m from Brisbane River, Jan 1995, *Bean* 8170 (BRI); Caboolture, Nov 1956, *Blake* 20044 (BRI, NSW); Brisbane River, 1863–65, *Dietrich* s.n. (BRI, K); Brisbane River, under Indooroopilly bridge, Nov 1980, *Olsen* 215 & *Dillewaard* (BRI); Moggill Creek, Nov 1957, *Whitehouse* s.n. (BRI).

Distribution and habitat: *L. brisbanica* is currently known only from an 11 kilometre-long section of the Brisbane River, between Moggill Creek and Oxley Creek. It is apparently extinct at some of the localities where it was formerly recorded, e.g. Breakfast Creek, Caboolture. It grows along tidal riverbanks in grey saline mud, in association with mangrove trees, particularly *Excoecaria agallocha* L. and *Aegiceras corniculatum* (L.) Blanco, and often adjacent to, or mixed with, *Triglochin striata* Ruiz & Pav.

Phenology: Flowers and fruits have been recorded between October and January.

Affinities: *L. brisbanica* seems most closely related to *L. novae-zealandiae*, because of external fruit morphology and leaves narrowly elliptical in cross-section, but differs by the 7 vittae per fruiting mericarp (8 for *L. novae-zealandiae*), bracts 0.5–1.3 mm long (1.5–3.0 mm long for *L. novae-zealandiae*), 5–7 septae per leaf (6–10 for *L. novae-zealandiae*), 2–5 flowers per umbel (4–8 for *L. novae-zealandiae*) and the more prominent dorsal ribs on the fruits.

L. brisbanica differs from *L. polyantha* by its fruits 1.2–2.0 mm long (2.5–3.5 mm for *L. polyantha*), 7 vittae per mericarp (8–9 for *L. polyantha*) and the much shorter leaves which are narrowly elliptical in cross-section, rather than terete.

Notes: *L. polyantha*, as circumscribed by Affolter (1985) is a heterogeneous assemblage of 3–5 taxa. I have not attempted to segregate the southern Australian taxa, and in my comparisons between *L. brisbanica* and *L. polyantha*, only the typical form of *L. polyantha* was considered. The type of *L. polyantha* was collected at Walcha on the New England Tableland of New South Wales.

L. brisbanica is geographically disjunct from other Australian *Lilaeopsis*. The nearest is that recorded by F. Mueller last century from Ballina, New South Wales. The Ballina specimen, lodged at MEL, represents *L. fistulosa* A.W.Hill, a species with long acute leaves, circular in cross-section, and relatively short inflorescences. A population of this species was recently located near Yamba (1.3 km S of Yamba, towards Angourie, Nov 1994, *Bean* 8033 (BRI, NSW)).

L. brisbanica is amenable to cultivation in pots, and it flowers and fruits readily. Fresh water appears to be quite satisfactory for its growth, and plantlets transplanted from the wild retain their general morphological characters in pot culture.

Conservation status: The risk category for *Lilaeopsis brisbanica* according to the criteria

of Chalson & Keith (1995) is 'critical' (criteria A, B1, B3, B5, B6, D). The species is known from only six populations in close proximity, each possibly comprising a single genotype. *L. brisbanica* is under threat from its limited distribution, trampling by horses, river-bank erosion, encroachment of weeds, and the

construction of jetties, retaining walls etc. The author has made extensive searches for *L. brisbanica* along other nearby tidal rivers, including the Maroochy R., Caboolture R., Pine R., Logan R., and Tweed R., and their tributaries, but without success.

The recommended conservation status for this species as defined by the *Queensland Nature Conservation Act 1992* is 'endangered'.

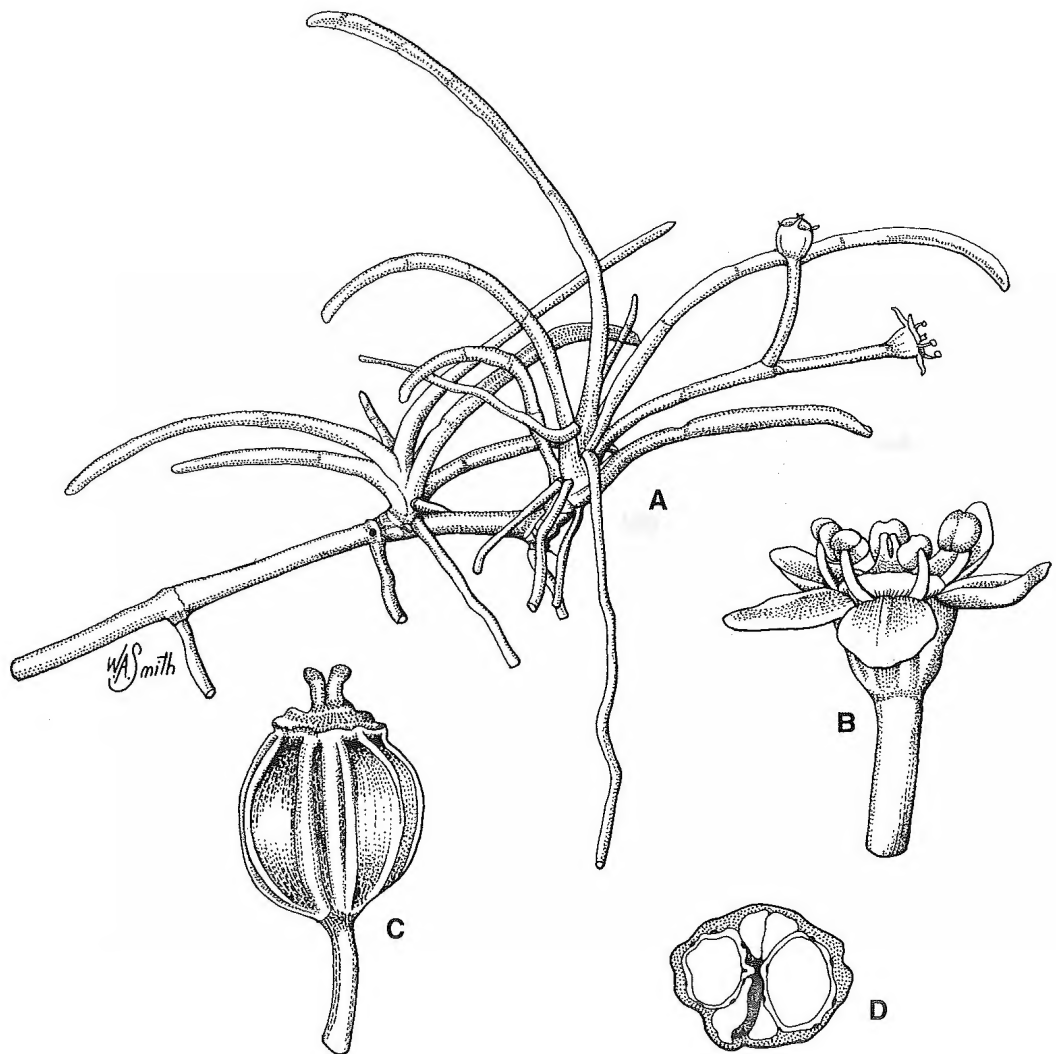


Fig. 1. *Lilaeopsis brisbanica*. A. whole plant $\times 4$. B. flower $\times 16$. C. fruit $\times 16$. D. transverse section of fruit $\times 16$. A,B.Bean 9243; C,D,Blake 20044.

Etymology: The species epithet refers to the city of Brisbane and the Brisbane River.

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References

- AFFOLTER, J.M. (1985). *A Monograph of the Genus Lilaeopsis (Umbelliferae)*. Systematic Botany Monographs, Vol. 6. United States of America: The American Society of Plant Taxonomists.
- BENTHAM, G. (1867). *Crantzia* in *Flora Australiensis* 3: 374. London: L. Reeve & Co.
- BLAKE, S.T. (1959). New or Noteworthy Plants, chiefly from Queensland, 1. *Proceedings of the Royal Society of Queensland*. 70: 33–46.
- CHALSON, J.M. & KEITH, D.A. (1995). *A Risk Assessment scheme for Vascular Plants: Pilot Application to the Flora of New South Wales*. Hurstville: National Parks and Wildlife Service.
- EICHLER, HJ. (1963). Some New Names and New Combinations relevant to the Australian Flora. *Taxon* 12: 295–297.
- HILL A.W. (1927). The Genus *Lilaeopsis*: a study in Geographical Distribution. *The Journal of the Linnean Society - Botany*. 47: 525–551.
- HILL, A.W. (1929). *Lilaeopsis* in Tasmania and New Zealand. *Bulletin of Miscellaneous Information, Kew*. 119–121.